

42-079-00014

COMMONWEALTH OF PENNSYLVANIA  
Department of Environmental Protection  
Bureau of Air Quality  
May 25, 2012  
717-787-9483

**SUBJECT:** Source Test Review  
UGI Development Company  
Hunlock Creek Energy Center  
49.9 MMBtu/hr Auxiliary Boiler, Source ID 035  
Hunlock Township, Luzerne County  
Plan Approval No. 40-328-006  
eFacts ID No. 2071356  
PFID No. 284013

**TO:** Brian Halchak, w/o attachments  
Engineering Services Section  
Northeast Regional Office

**FROM:** Darren T. Lauer *D.T.L.*  
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UGI Development Company operates a natural gas fired auxiliary boiler unit at its Hunlock Creek Energy Center. The boiler has a permit listed heat input capacity of 49.9 MMBtu/hr. The auxiliary boiler is used to provide start up steam for the facilities combustion turbines and heat for the facilities office buildings. Emissions from the boiler are discharged to the atmosphere through a circular exhaust stack.

On March 8, 2012, CEMServices, Inc. performed compliance testing in accordance with the plan approval to determine nitrogen oxides (NOx) and carbon monoxide (CO) emissions from the auxiliary boiler while firing natural gas. During testing, EPA Methods 1, 2, 3A, 4, 7E, 10, and 19 were used. The EPA Method 19 published Fd Factor of 8,710 dscf/MMBtu was used to determine the reported lbs/MMBtu emission rates. The average fuel flow rates and heating values for the natural gas fuel were used to determine heat input for documenting boiler operating levels during testing. The average heat input of the boiler was 17.7 MMBtu/hr, this represents 35.5 % of the maximum rated heat input of 49.9 MMBtu/hr. However, company

representative Jeff Steeber in our 5/15/12 phone conversation stated that the permit listed heat input capacity is incorrect and it should be 25 MMBtu/hr, which would increase the boiler average percent of rated heat input during testing to 70.8 %.

The test results are acceptable to the Department as representative of the emissions under the operating conditions during testing and may be used for compliance determinations.

The following is a summary of data presented for the boiler source (ID 035) in the test report:

**Operating Data:**

Test Date: 3/8/12				
Run Number	1	2	3	Avg.
Fuel Heating Value (Btu/cf)	1,034	1,034	1,034	1,034
Fuel Flow Rate (scf/hr)	17,100	17,140	17,120	17,120
Heat Input (MMBtu/hr)	17.7	17.7	17.7	17.7
Max. Rated Heat Input (MMBtu/hr)	49.9 *			
% of Rated Heat Input <sup>1, *</sup>	35.5	35.5	35.5	35.5

\* the heat input listed in the permit was stated to be incorrect as noted previously

**NOx & CO Test Results:**

Test Date: 3/8/12				
Run Number	1	2	3	Avg.
Volumetric Flow Rate (dscfm)	3,275	3,313	3,271	3,286 <sup>1</sup>
NOx Emission Concentration (ppmdv)	24	24	24	24 <sup>1</sup>
NOx Emission Concentration (ppmdv at 3% O <sub>2</sub> )	24	25	25	25
NOx Allowable Emission Concentration (ppmdv at 3% O <sub>2</sub> )	30			
NOx Emission Rate (lbs/hr)	0.57	0.58	0.57	0.57
NOx Mass Emission Rate (lbs/MMBtu)	0.030	0.030	0.030	0.030
CO Emission Concentration (ppmdv)	208	204	241	218 <sup>1</sup>
CO Emission Concentration (ppmdv at 3% O <sub>2</sub> )	210	206	243	220
CO Allowable Emission Concentration (ppmdv at 3% O <sub>2</sub> )	300			
CO Emission Rate (lbs/hr)	2.98	2.95	3.44	3.12
CO Mass Emission Rate (lbs/MMBtu)	0.155	0.152	0.179	0.162

<sup>1</sup> reviewer calculated data and averages based on reported data

cc: AIMS/AKB, w/o attachments  
EPA/AKB, w/o attachments  
Reading File, Source Testing Section, w/o attachments

ec: V. Trivedi, New Source Review Section, Division of Permits